



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/525,892	03/15/2000	Alfonso Navarro	134421.98641	9509
26710 7590 10/28/2008 QUARLES & BRADY LLP 411 E. WISCONSIN AVENUE SUITE 2040 MILWAUKEE, WI 53202-4497				
EXAMINER				
CHAWLA, JYOTI				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
10/28/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/525,892

Applicant(s)

NAVARRO ET AL.

Examiner

JYOTI CHAWLA

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4, 17, 19 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4, 17, 19 and 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on September 18, 2008 have been entered, wherein claims 4 and 17 have been amended and claims 25-26 have been added. Claims 4, 17, 19 and 21-26 are pending and examined in the application.

Claim Rejections - 35 USC § 112

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Rejection of claim 17 steps (e) for the recitation of "monitoring the wort for end of fermentation", has been withdrawn based on applicant's amendment dated 9/18/2008.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1794

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1) Claims 4, 17, 19 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quain (GB 2197341 A) in view of the combination of Handbook of Brewing, Seebeck et al (US 4329433) and Lindberg et al (US 4840802), further in view of applicant's admitted prior art (Pages 1-4).

Regarding claims 4 and 17 steps (a), (b), (d) and (e), Quain teaches a method for brewing beer which includes a method of enhancing yeast fermentation of wort by suspending yeast in a wort-free aqueous solution (water or other aqueous liquid, comprising liquid adjunct (Page 1, lines 26-31 and 41-54; Page 2, line 18 to page 3, line 40); and aerating the suspension for a period of time with a gas comprising oxygen to allow oxygen uptake by the yeast required for sterol and unsaturated fatty acid synthesis (Page 1, lines 13-15 and lines 41-42).

Regarding the limitation of gas comprising oxygen being delivered above a maximum oxygen uptake rate, Quain teaches that the oxygen can either be supplied alone or in combination of gases as instantly claimed. Quain also teaches that "the oxygen content of aqueous suspension is monitored and the rate at which the oxygen is introduced is

increased in such a manner as to maintain the concentration of oxygen in the suspension substantially constant" and Quain also teaches that "oxygenation continuing at least until such time as there is no longer any need to increase the rate of introduction of oxygen to maintain the same concentration of oxygen in the suspension." (Page 1, 43-48). Thus, Quain teaches that the oxygen introduction rate to the yeast solution is progressively increased above the uptake rate of yeast until at least the time when the yeast reaches its maximum oxygen uptake rate and the delivery or supply of oxygen is maintained afterwards (Page 1, lines 43-65), as is instantly claimed.

Regarding the newly added limitation to step b) of claims 4 and 17 of the time of aeration or oxygenation of 8-21 hours as claimed, Quain teaches of delivering air at a rate of 1 liter/ minute for 6 hours to a sample of 200 grams of ale yeast from previous fermentation (Page 2, lines 18-21). Quain also teaches that oxygenation is continued until such time as there is no longer any need to increase the rate of introduction of oxygen to maintain the same concentration of oxygen in the suspension (Page 1, lines 43-48), which means that oxygenation is continued until the maximum oxygen uptake rate of the yeast is reached, which is also the intent of the applicant. Further, it is noted that the time of aeration of yeast will be subject to variation at least based on the type of yeast sample being aerated, the size of yeast sample being aerated, the oxygen level of the yeast at the onset of aeration, the rate of supply of air/oxygen and if the oxygen is supplied as a gas mixture, then the proportion of oxygen in the specific mixture being supplied to the yeast.

Further regarding the time of aeration applicant's own disclosure states "Typically yeast aerated in a sugar solution for from about 8 hours up to about 21 hours exhibit optimal yeast performance in subsequent fermentations. The optimal aeration time may vary according to the aeration rate or the source of oxygen 5 (e.g., air or pure oxygen), but typically the aeration/oxygenation rate is kept above the maximum OUR of the yeast." (Specification, page 10, line 26 to page 11, line 6).

Thus, based on the teaching of Quain (Page 2, lines 18-21) of aerating a 200 gram sample of yeast for 6 hours wherein air is supplied at the rate of 1 liter/min, and applicant's disclosure (pages 10-11), it would have been obvious to one of ordinary skill in the art at the time the invention was made that time of aeration of yeast depends on various factors and can be modified based on other conditions of aeration. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Quain and specify the time of oxygenation at least based on the type of yeast sample being aerated, the size of yeast sample being aerated, the oxygen level of the yeast at the onset of aeration, the rate of supply of air/oxygen and if the oxygen is supplied as a gas mixture, then the proportion of oxygen in the specific mixture being supplied to the yeast, as long as oxygen or gas containing oxygen is supplied to reach the maximum oxygen uptake rate of the yeast and is maintained afterwards, as taught by Quain (Pages 1-2), which is also applicant's intent.

Regarding step (e) of claims 4 and 17, Quain also teaches transferring the yeast when it reaches maximum oxygenation uptake (Page 2, lines 1-10 and Page 3, lines 40-60) and fermenting under suitable fermentation conditions to produce beer (Page 3, lines 60-65).

Regarding the liquid adjunct and cereal sugar claims 4 and 17, step (a) and claims 21-24, Quain teaches aqueous solution containing yeast to be aerated (Page 2, lines 18-20 and 55-56), however, Quain does not specify the contents of the aqueous solution. It is noted however that yeast are not photosynthetic and thus depend upon organic carbon compounds for energy to survive. An "adjunct" is broadly defined as something that is added, therefore, aqueous solution as taught by Quain will constitute as liquid adjunct. Regarding the aqueous solution or liquid adjunct containing nutrients or cereal sugars to keep the yeast alive and take up oxygen as recited in claims 4 and 17, Quain is silent. Handbook of brewing teaches that among the nutritional requirements of brewer's yeast, the carbohydrate requirement involves use of sugars like sucrose, glucose

Art Unit: 1794

(dextrose) and fructose (fruit sugar), maltose and maltotriose. It is known that maltose and maltotriose are examples of sugars that pass intact across the cell membrane of yeast, and are thus easily absorbed. It is also known that maltose and maltotriose (malted sugars) are the major sugars in the brewer's wort. According to the Handbook of brewing, ability of brewer's yeast to absorb and metabolize maltose and maltotriose is essential to the determination brewer's yeast's quality (Page 182, Part C, also see pages 183 and 184). Further, prior art reference Seebeck also teaches a method of fermentation where Seebeck teaches that "before actual fermentation of the juice, the yeast is cultured in a fermentation tower under aerobic conditions... with an enriched sterile nutrient solution" (Column 2, lines 40-45 and also see Abstract, last 5 lines). Seebeck also teaches that "grape juice or a concentrated grape juice or other fruit juice, such as apple juice can be used as a nutrient solution for the culture of the yeast which is brought to a sugar concentration suitable for yeast culturing by dilution with water and treated with ammonium salts as nutrient for yeast" (Column 2, line 67 to column 3, line 4). Juices contain sugars mainly as glucose (dextrose) and fructose.

Thus, based on the teaching of Handbook of Brewing and Seebeck, aeration and cultivation of yeast in a nutrient rich medium comprising sugars, as claimed, was known in the art at the time of the invention. It was also known that the assessment of brewer's yeast's ability to metabolize sugars, such as glucose, maltose and maltotriose, would have been a matter of routine determination for one of ordinary skill in the art at the time of the invention. It would have been important for one of ordinary skill in the art at the time of the invention to determine the ability of brewer's yeast to metabolize sugars, such as maltose, maltotriose etc., at least in order to determine the quality of yeast and also determine the optimal amount of brewer's yeast required for fermentation of a particular amount of wort to make a desirable fermented product in a consistent manner. Therefore, one of ordinary skill in the art at the time of the invention would have been motivated to modify Quain in view of Handbook of Brewing and Seebeck and add nutrients including sugars, such as glucose (dextrose) and cereal sugars, such as, maltose and maltotriose to the oxygenating aqueous solution, in order to provide the oxygenating yeast with a carbon source for energy and maintain yeast viability. One of

Art Unit: 1794

ordinary skill in the art would be further motivated to add the sugars dextrose, maltose and maltotriose (as taught by Handbook of Brewing and Seebeck) to the aqueous suspension as taught by Quain, in order to increase the specific gravity of the aerating medium to near the specific gravity of wort which will decrease the lag time upon pitching and will be advantageous in reducing the overall fermentation time.

Quain is silent regarding the addition of zinc to the yeast suspension. Regarding the addition of zinc to the yeast suspension or the adjunct liquid as recited in step (c) of claims 4 and 17, applicants cite that addition of zinc as a nutrient for the yeast was known (Top of page 3 of the specification). Lindberg, teaches that zinc is added to yeast fermentations to enhance yeast growth during fermentation and consequently increases the fermentation rate (Abstract, Column 1, lines 37-40 and Column 6, lines 55-60). Further, the Handbook of Brewing teaches that addition of zinc to water that is used in brewing processes was known. Proprietary blended yeast foods containing zinc are used in brewing as aids to reduce problems and have a more consistent fermentation (Pages 216-217). Zinc plays an important role in the protein synthesis and yeast growth and also reduces toxicity of cadmium (Page 143). Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to further modify Quain and add zinc as part of the nutrient component in the aqueous suspension of yeast at least for the reason of enhancing the fermentation ability of the yeast upon pitching into the fermentation medium (based on the teaching of Handbook of Brewing and Lindberg). One of ordinary skill would have been motivated to add zinc along with other nutrients into the aeration medium in order to let the yeast obtain the beneficial effects of zinc, including the benefits of zinc in protein synthesis and reduction of toxicity of cadmium and will result in yeast having an enhanced fermentation ability upon pitching, which will in turn result in faster and more consistent rate of fermentation thereby reducing the time of the overall beer making process, which is also the intent of the applicant.

Regarding the specific gravity of the aqueous liquid medium for aeration of yeast (Claims 4 and 17, step (a)), Quain teaches that yeast from previous fermentation is held in a collection vessel in the form of an aqueous suspension and is mixed with water or aqueous liquid (Page 3, lines 12-18 and line 56). Quain is silent regarding the specific gravity of the aqueous medium or liquid adjunct for the aeration of yeast, however, yeast from previous fermentation is aerated (Page and a yeast obtained after the desired fermentation as taught by Quain will have some of the sugar and other components in the suspension, which even after dilution with water or other aqueous solution (as taught by Quain, page 2, line 19 and line 56) will result in specific gravity of the yeast suspension to be higher than the specific gravity of water (which is SG units 1 at 4 °C), i.e., even if yeast is pitched in distilled water or aqueous solution containing no added sugars, the resulting solution containing yeast will have the specific gravity higher than that of pure water, i.e., higher than 1.

Further, it is noted that the addition of sugars increase the specific gravity of the liquid to which they are added, (i.e., liquid adjunct in the present case). As discussed above regarding the nutrient medium, Handbook of Brewing teaches addition of sugars sucrose, glucose (dextrose) and fructose (fruit sugar), maltose and maltotriose (Handbook, Page 182, Part C, also see pages 183 and 184) and Seebeck teaches addition of fruit juices (which comprise of glucose and fructose mainly) (Column 2, lines 40-45, 67-68, Column 3, lines 1-4 and also see Abstract, last 5 lines) to provide for the nutritional requirements of brewer's yeast. Seebeck also teaches of adding sugars in a concentration suitable for yeast culturing (Column 3, lines 1-4). The references are silent regarding a specific measure of specific gravity for the liquid adjunct. However, at the time of the invention it was known that the sugar content (and thus, the specific gravity) of the fermentation medium, such as, wort, is suitable for the yeast growth.. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Quain and add nutrients in the form of sugars in an amount such that the specific gravity of liquid adjunct is similar to the specific gravity of the fermentation medium.

Regarding the fermentation medium, Quain teaches the specific gravity of the ale wort for pitching of 1.060 (i.e., about 14 degrees Plato wherein degree Plato = $\frac{259}{\text{specific gravity points}}$) to which the aerated yeast is pitched (Page 2, lines 38-40), which falls within the applicant's recited range of 5-20 degrees Plato. (Also see Figures 2 and 3 which show the specific gravity values during the process of fermentation.) Thus, specific gravity in the range of about 14 degrees Plato (i.e., in the instantly claimed range) was known to be optimal for the pitching yeast at the time of the invention (Quain). Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention to modify Quain and aerate the yeast in a solution that has the specific gravity value comparable to the one used for pitching as taught by Quain, at least in order to regulate the fermentation process by letting the yeast have an environment with consistent specific gravity from the aerating medium to the fermentation medium, thereby decreasing the lag time and increasing the chance of the yeast to grow and ferment at an optimal level upon pitching to the wort. One would have been further motivated to do so in order to make the fermented product more consistently in lesser amount of time, as taught by Quain (Page 3, lines 62-64).

Regarding the addition of yeast to a suitable volume of non-aerated wort as recited in steps (d) of claims 4 and 17, the wort taught by Quain is oxygen-free wort, i.e., non-aerated wort (Page 1, lines 32-35), as instantly claimed.

Claim 17 recites a method for fermenting wort wherein steps (a)-(e) have the same limitations as recited in steps (a)-(e) of claim 4, thus claim 17 steps (a)-(e) are rejected for the same reasons as steps (a)-(e) of claim 4.

Regarding claim 17 (f), Quain teaches monitoring the wort for an end of fermentation, wherein the end of fermentation is reached in a shorter time as compared to a fermentation method wherein aerated wort is pitched with non-aerated yeast slurry (Page 1, lines 21-31). Regarding the newly added limitation of end of fermentation being

determined by decline in specific gravity, Quain teaches of predetermined decline in specific gravity as shown in the fermentation process plots of figures 2 and 3 which show the specific gravity values decline during the process of fermentation, as is instantly claimed.

Regarding claim 19, Quain teaches using brewer's yeast (Page 1, line 50), as instantly claimed.

Regarding claims 21 and 22, Quain teaches suspending yeast in an aqueous medium to oxygenate however is silent regarding the use of maltose, maltotriose and glucose (dextrose) in the adjunct. Quain is silent regarding the addition of cereal sugars to the yeast suspension as recited in claims 21 and 22. It is noted, however, that yeast are not photosynthetic organisms and depend upon organic carbon compounds for energy to survive. Further, as discussed in the rejection above, Handbook of Brewing teaches that among the nutritional requirements of brewer's yeast, the carbohydrate requirement involves use of sugars like sucrose, glucose (dextrose) and fructose (fruit sugar), maltose and maltotriose. It is known that maltose and maltotriose are examples of sugars that pass intact across the cell membrane of yeast, and are thus easily absorbed. It is also known that maltose and maltotriose (malted sugars) are the major sugars in the brewer's wort. According to the Handbook of brewing, ability of brewer's yeast to absorb and metabolize maltose and maltotriose is essential to the determination brewer's yeast's quality (Page 182, Part C, also see pages 183 and 184). Thus based on the teaching of Handbook of Brewing, it is noted that the assessment of brewer's yeast's ability to metabolize sugars, such as glucose, maltose and maltotriose, would have been a matter of routine determination for one of ordinary skill in the art at the time of the invention. It would have been important for one of ordinary skill in the art to determine the ability of brewer's yeast to metabolize sugars, such as maltose, maltotriose etc., because the quality of yeast determines the optimal amount of brewer's yeast required for fermentation of a particular amount of wort in order to make a consistent fermented product in a consistent manner. Therefore, one of ordinary skill in

the art at the time of the invention would have been motivated to modify Quain in view of Handbook of Brewing and specifically state the addition of nutrients including cereal sugars, such as glucose (dextrose), maltose and maltotriose to the oxygenating aqueous solution, in order to provide the oxygenating yeast with a carbon source for energy and maintain yeast viability. One of ordinary skill would have been further motivated to do so in order to get a feedback about the quality or genetic makeup of the yeast while also oxygenating the yeast at the same time. Further, it is noted that the addition of sugars to the aqueous suspension as taught by Quain would also help in modifying the specific gravity of the aerating medium as discussed above.

The limitations recited in claims 23 and 24 are the same as the limitations of claims 21 and 22 respectively, thus claims 23 and 24 are rejected for the same reasons as claims 21 and 22 above.

Regarding the pH of the aqueous solution for aeration of yeast as recited in claim 25, Quain teaches of addition of distilled water or other aqueous solution (Page 2, lines 19 and 56). Water has a neutral pH of 7, which is more than pH of 6 as instantly claimed.

Regarding the pH of the aqueous solution for aeration of yeast as recited in claim 26, Quain teaches of addition of distilled water or other aqueous solution (Page 2, lines 19 and 56). Water has a neutral pH of 7, which is more than pH of 6 as instantly claimed.

Response to Arguments

Applicant's arguments, filed September 18, 2008 have been fully considered but are moot in view of new grounds of rejection.

Applicant's remarks regarding the 35 USC 112 rejections have been considered and responded in the office action above.

Art Unit: 1794

I) Applicant's argument that Quain does not teach the newly added limitations of "aerating the yeast suspension for a period of time with a gas comprising oxygen to allow oxygen uptake by the yeast, wherein the gas is delivered above a maximum oxygen uptake rate of the yeast and wherein the period of time is 8 hours up to about 21 hours." (Remarks, page 6, lines 5-8), has been considered and responded in the rejection above.

II) Regarding applicant's arguments about Quain and Handbook of Brewing not teaching "specific gravity" (Remarks, page 6), and applicant's argument that Quain does not show the addition of maltose and maltotriose and there is no motivation to combine the references (Remarks, page 7) have been considered and responded in the rejection above.

Regarding applicant's allegation that there is no motivation to combine Quain and Handbook of Brewing, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's arguments against the references individually (Remarks pages 6-7), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Thus applicant's arguments are directed to the newly amended claims, which have been examined in the office action above. Applicant's arguments are moot in view of new grounds of rejection and claims 4, 17, 19, 21-26 are rejected for reasons of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JYOTI CHAWLA whose telephone number is (571)272-8212. The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JC
Examiner
Art Unit 1794

/KEITH D. HENDRICKS/
Supervisory Patent Examiner, Art Unit 1794